

Monthly Activity Report

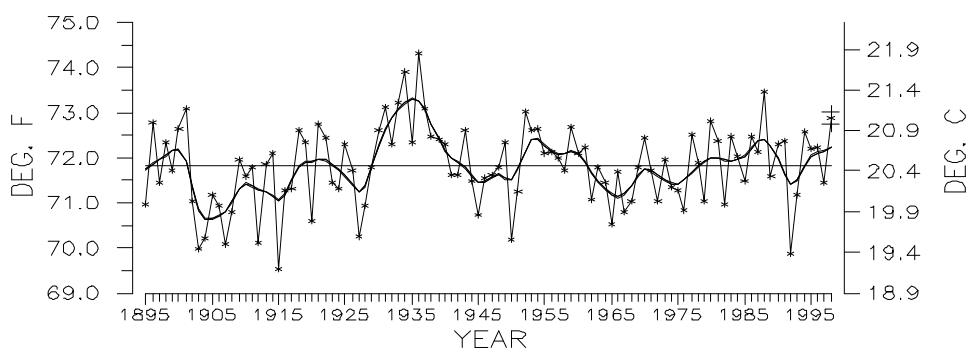
August 1998

National Climatic Data Center

A National Resource for
Climate Information



U.S. NATIONAL TEMPERATURE
SUMMER (JUNE–AUGUST), 1895–1998



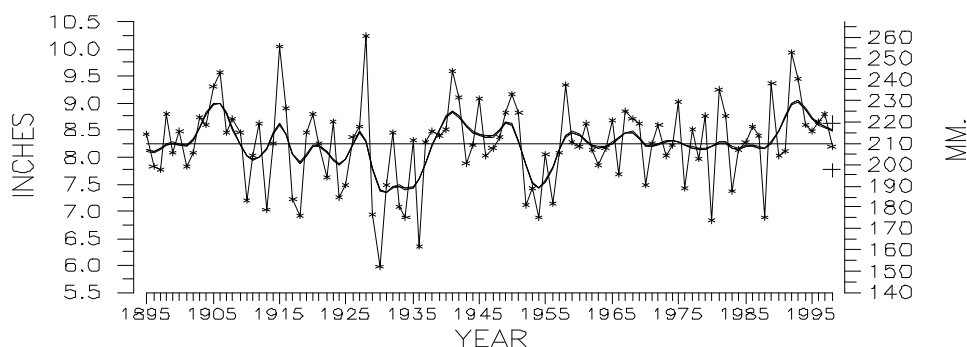
National Climatic Data Center, NOAA

STRAIGHT HORIZONTAL LINES ARE
MAXIMUM VALUE (TOP),
LONG-TERM AVERAGE (MIDDLE),
MINIMUM VALUE (BOTTOM)

THICK SMOOTH CURVE
IS 9-POINT BINOMIAL
FILTER.

CONFIDENCE INTERVAL
FOR CURRENT YEAR IS
INDICATED BY '+',

U.S. NATIONAL PRECIPITATION
SUMMER (JUNE–AUGUST), 1895–1998



National Climatic Data Center, NOAA

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Preliminary temperature data indicate that the 1998 summer season, June–August, for the contiguous U.S. was the ninth warmest such season since 1895 (top figure). Twenty-eight percent of the country was much warmer than normal, while none of the country was much cooler than normal.

Preliminary data indicate that summer 1998 was the 44th driest such period on record for the contiguous U.S. (bottom figure). Nearly eight percent of the country was much drier than normal while about nine percent was much wetter than normal.

DIRECTOR'S HIGHLIGHTS

NCDC Mission Support Services Contract

The Orkand Corporation was awarded the National Climatic Data Center (NCDC) Mission Support Services contract for FY99. This contract provides support for 13 service areas including data entry, mail handling, copying, small computer maintenance, computer operations, fulfillment of orders, records check-in, archive maintenance, and photography. The contract is for one year with four option years.

White House Support

The National Climatic Data Center (NCDC) prepared several documents for Vice President Gore and Under Secretary Baker to take to Florida August 7 aboard Air Force 2. Information on the July 1998 global and national climate was provided in addition to data on past hurricane seasons and their relationship to El Niño years and La Niña years. The Vice President and NCDC Director Tom Karl also used the data in a Press briefing August 10. As a result of the Vice Presidential announcement regarding the unusually warm global temperatures in July 1998, NCDC's Rob Quayle, Tom Peterson and Michael Crowe were interviewed by numerous reporters in the U.S. and abroad concerning the measurements compiled by NCDC.

Weather Highlights Summary Prepared for White House Briefing

The National Climatic Data Center (NCDC) provided a one-page weather highlights and impacts summary for a White House briefing on August 10. The summary included data and information for several spring-summer 1998 events. These included the Texas/Oklahoma heat wave and drought, summer drought in the

southeast, May-June Florida drought and wildfires, summer flooding in the Midwest and northeast, spring tornadoes in the southeast, summer heat wave in southeastern Europe, and summer flooding in China.

Film Rescue Milestone Complete

A three-year effort designed to rescue deteriorating film located at the National Climatic Data Center (NCDC) has been completed on time and within budget. This project involved the migration of approximately 81,000 rolls of deteriorating 16mm and 35mm acetate-based microfilm to a more stable media. The film contained images of weather observation forms and charts dating from the 1700s through 1970s. Examples include upper air and pilot balloon sounding reports, ship weather observations, and radar scope images. A partnership was formed with Image Entry, a contractor in Kentucky, to migrate the film to polyester media over the last two years. NCDC also effectively leveraged three years of Environmental Sciences Data Information Management (ESDIM) funding to inventory and prioritize the film prior to shipping it to Kentucky for rescue. An additional 40,000 reels of film await rescue and a contract is currently out for bids for this work.

Summer Climate

The National Climatic Data Center (NCDC) has begun planning and coordinating for spring-summer 1998 global climate press releases and Web sites to be completed in mid-September. NCDC personnel are assisting with coordinating the Web work and graphic contents, Climate Predication Center coordination, climate impact assessment, U.S. anomalies, and perspectives on new extremes.

CLIMATE DATA AND INFORMATION SERVICES

✦ Database Development

1896-1947 Midwest Data

Daily temperature and precipitation data for 10 Midwestern states for the period 1896-1947 have been added to the National Climatic Data Center's (NCDC) digital database. The data were provided to NCDC as a follow-on to an extensive data digitization project carried out by the Midwestern Regional Climate Center (MCC). The MCC project was a collaborative effort by state climatologists to convert early data for IL, IN, IA, KY, MI, MN, MO, NM, OH, and WI that were only available in printed form to digital files. The data are available via routine customer service access (orders@ncdc.noaa.gov, 828-271-4800).

✦ Data and Information Distribution

Coast Pilots

The National Climatic Data Center (NCDC) provided the National Ocean Service with ten chapters, 15 climatological tables, and six meteorological tables for U.S. Coast Pilot Volume #4. New Climatological tables were added for: Elizabeth City, NC; New Bern, NC; Cherry Point, NC; Beaufort, SC; and Brunswick, GA. The new chapters contain narratives for each climatological table including new sections for the five new tables. This completes one phase of the reimbursable project. Another volume is due out later this calendar year.

Gridded Data Sets Available on Web Site

Gridded data sets of monthly land surface temperature anomalies are now available from the

National Climatic Data Center's Web site at: <http://www.ncdc.noaa.gov/ol/climate/research/ghcn/ghcn.html>.

These data sets contain gridded temperature anomalies for three parameters (mean, maximum and minimum temperatures) from the Global Historical Climatology Network (GHCN), Version 2 monthly temperature data sets. The data were produced on a 5 X 5 degree basis using land station records from January 1880 to the present. The anomalies were calculated with respect to the period 1961-1990.

Data Sales Show Increase For August

August 1998 data sales reflect a 5 percent increase over August 1997 totals due primarily to a growing number of on-line data orders. Total customer transactions, which include information inquiries and data orders, displayed a 3 percent increase over August 1997 figures. The ongoing transition from more traditional contact media, such as letter correspondence and telephone calls, to electronic mail contacts seems to have accelerated during August 1998. At the same time, electronic mail contacts increased by 32 percent over the same month a year ago. The growing popularity of National Climatic Data Center (NCDC) data sets available on the Internet is demonstrated by the 20,000 customer contacts logged on the NOAA National Data Centers (NNDC) On-Line Data Store site in August 1998, which represents a 13 percent increase over July 1998 contacts for that system after only eight months of on-line operations. NCDC customers accessed 1.9 Gigabytes of data from the On-Line Data Store during the August 1998 period. Close analyses of the on-line customer statistics indicate that annual subscriptions for on-line data sets and publications are beginning to have a significant impact on on-line sales.

Rescuing Historical Data, the Scanning Continues

Establishing a smooth running operational system has been the major thrust during the month as it concerns the scanning project being worked with Information Manufacturing Corporation (IMC) of Rocket Center, WV. The flow of paper to and from IMC, and the flow of images through the National Climatic Data Center (NCDC) Quality Assurance, Quality Review system, and loading into the OnBase system is now functioning. With the system now established, the project will move into a catch-up mode. An Integrated Imaging Management System is under development to help track and manage every aspect of the project. Approximately 2.7 million pages have been imaged and delivered to NCDC.

ESDIM Proposal for FY99

An Environmental Sciences Data Information Management (ESDIM) Proposal for Efficient Storage and Display of WSR-88D Radar Data was submitted for FY99. This work will be accomplished in cooperation with the University of Iowa and will provide a program to display and analyze Level II data from compressed data files. The effort will also give the National Climatic Data Center the ability to convert Level II and III images to Web-displayable format and provide them to users on line.

Improved Next Generation Weather Radar (NEXRAD) Web Services

Two improvements have been made to National Climatic Data Center (NCDC) Web pages to enhance access to WSR-88D data and information. The National Mosaic Reflectivity Images page now includes a looping capability for 3-hourly images, as well as hourly and daily, and the capability to click on any location on the national map and blow up (zoom in) that location with a selectable magnification of 2x to 5x. The images may also be viewed in a column and row format, provided by Ted Haberman and Ian Sprod of the

National Geophysical Data Center.

The National Climatic Data Center (NCDC) is developing an Event Directory which contains information from the Storm Data Publications. Web users can select dates, times, storm types, as well as states or counties of interest and receive storm statistics and narratives based on the selection. Storm Events currently cover 1996 - June 1998. Storm Data statistics will be added for 1993 onward. Statistics on tornadoes, thunderstorms and hail from 1953 onward will also be added in the next few weeks. The Event Directory can be accessed from the NCDC Home Page, In the Spotlight, and a link from the Radar Resources pages will be added in the future.

WSR-88D Data Provided to USWRP

The National Climatic Data Center (NCDC) is filling a request for data from the U.S. Weather Research Program (USWRP) in support of a National Center for Atmospheric Research (NCAR) project. The NCAR request includes four case studies of one or two days of data for 11 to 24 stations depending on the case. Data for the first case has been sent to NCAR. NCDC plans to copy the data for one case each week and complete the request before the end of September.

NNDC Server Demo for NVDS DSAC

The NOAA National Data Centers (NNDC) Server team met at the National Geophysical Data Center (NGDC) with the purpose of coordinating development and giving the NOAA Virtual Data System (NVDS) Data System Advisory Council (DSAC) a demonstration of the system capabilities to this point. Capabilities include: the creation of a generic Geographic Information System (GIS) map maker which allows the user to locate stations within X miles of rivers, cities or within a defined state using Environmental Systems Research Institute (ESRI) Map Objects; seamless access to images/data from Data Centers' legacy systems (such as NCDC's Live Access Server, CLIMVIS, NGDC's WIST and others); access to multiple

RDBMS data at each data center (the Unisys Migration Data Base and others), development of graphical spreadsheets plotting various parameters from user selected data bases; and access to more than 40 data sets.

NOAA Server/NNDC Server Convergence

Representatives from the NOAA Server and NOAA National Data Centers (NNDC) Server project met at the University Corporation for Atmospheric Research (UCAR) in Boulder, CO, to define the goals of each system, areas of potential sharing of technology, and methods to converge the systems and ensure no duplication of effort. The results and a plan for future coordination will be presented to Dr. Susan Zevin.

NWS AWIPS Archive Requirements

National Climatic Data Center (NCDC), National Weather Service (NWS), Advanced Weather Information Processing System (AWIPS), and Service Records Retention System (SRRS) representatives met in Washington August 6. Based on an NWS AWIPS meeting held last October, NCDC proposed four archive options to meet the NWS regional office AWIPS archive requirements. At the meeting, NCDC was informed that there are no documented NWS AWIPS archive requirements and thus no funding to support an archive. However, NWS will continue to provide funding to meet their NWS SRRS legal requirements.

Surface Data Supplied for ASHRAE

The National Climatic Data Center (NCDC) provided hourly surface data for six stations in various parts of the world to a Canadian contractor working for the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). The stations were Lisbon, Portugal; Fukuoka, Japan; New Delhi, India; Christchurch, New Zealand; Sofia, Bulgaria; and Hanoi, Vietnam. The data were provided to evaluate the

use of cloud layer and snow data for modeling solar parameters. The modeled data will then be incorporated into the new International Weather Year for Energy Calculations (IWYEC) data set which ASHRAE is developing.

◆ Research Customer Service Group Requests

Data for Lyme Disease Research

The University of Michigan is studying the environmental variables affecting the distribution of the Lyme disease vector *Ixodes Scapularis*. In doing so, they've made extensive use of NCDC's Web site, especially using the cooperative historical monthly precipitation data in their analysis. Their study will attempt to correlate the distribution and frequency of the disease with variables such as precipitation. The monthly precipitation data set provides more than 8,000 stations' data on line, and is available at the following URL: <http://www.ncdc.noaa.gov/ol/climate/online/coop-precip.html>.

◆ Satellite Data Requests

Data for Dust Storm Research

The U.S. Geological Survey (USGS) in Flagstaff, AZ, is studying dust storms in the Mojave Desert region of southeastern California. In this study, the researchers are combining ground-based meteorological data with satellite imagery to identify and track dust storm events in this region. They have used the National Climatic Data Center's (NCDC) Web site extensively in acquiring the needed data to provide mean daily wind speeds at ten sites in the Mojave region from 1994 through June 1998. To obtain more detailed and complete data, USGS obtained hourly surface data on 8mm tape for the same sites for 1994 -1998. Earlier, visible 1-kilometer resolution GOES-9 data were acquired and are being examined for possible use in future research studies.

Gulf War Illness Request

The Office of Special Assistant to the Deputy Secretary of Defense for Gulf War Illness has requested satellite images of Iraq during a two-week period in February 1991. These images depict smoke plumes from which surface wind direction may be acquired. The data can be used to estimate areas of potential contamination from possible sources of illness-causing combustion.

◆ Requests from News Media

NESDIS Press Release to News Media

The National Climatic Data Center (NCDC) provided a press release for the National Environmental Satellite, Data, and Information Services (NESDIS) Public Affairs Office concerning the climatic extremes and weather events-related Web pages on-line at NCDC. It refers users to NCDC's centralized site for extremes and events and describes some of the many items available through NCDC's Web system. This was released on July 27 and should increase news media awareness of what NCDC has on-line, and possibly reduce calls asking what Web page to use. NCDC has seen a tremendous surge in news media interest and inquiries this year on climate and weather-related issues, with many more news articles devoted to these topics.

Warmer World

National Climatic Data Center (NCDC) personnel Tom Peterson, Tom Karl, Rob Quayle, and others participated in numerous interviews including encyclopedia publishers, newspapers, radio, and television. One persistent theme involves how current events are consistent with a warmer world as per the quotes from Dr. Baker in NOAA's April 7, 1998, press release.

Media Blitz

Tom Peterson of the National Climatic Data

Center (NCDC) was interviewed August 12 by NBC News concerning measurements compiled by NCDC. The interview was a result of a recent Wall Street Journal article regarding the unusually warm global temperatures in July 1998. NCDC's Robert Quayle also spoke to *Investors Daily* and *Smart Money* magazine reporters.

Data Supplied Using On-line System

Gabriel Snyder of the *New York Observer* was faxed unedited May-July 1998 data for New York's JFK Airport and Central Park. The data were acquired using the NOAA National Data Centers data access Web page. Mr. Snyder used the data in comparing this summer's temperatures in the New York area with past years.

◆ Private Industry Interactions

Daily Summary Data for Europe

The National Climatic Data Center (NCDC) provided 1992-1993 daily summary data for all of Europe (approximately 2,000 stations) to a large weather/climate consulting firm in California. Data for 1994 to the present had already been obtained from NCDC's Web site. The firm provides a variety of services to many different industries such as retail, manufacturers, energy, agriculture, commodities, and finance. These services help industries evaluate weather impacts on their businesses, such as how weather affects different product lines. This summary-of-day product, which includes 18 climatic elements derived from hourly and synoptic data, will be used by the firm to determine what the capabilities are for providing consulting services for other parts of the world. The exposure on the Web has already led to several large orders for this particular product.

◆ Technology Applications

NEXRAD/GOES Data Used

The National Climatic Data Center sent Next

Generation Weather Radar (NEXRAD) Level II radar data for September 2-3, 1997, from the San Joaquin (KHNX) radar site to a researcher at the Department of Atmospheric Science at Colorado State University. The researcher is working with National Oceanic and Atmospheric Administration (NOAA) personnel in investigating the use of collocated NEXRAD and Geostationary Operational Environmental Satellite (GOES) data to aid in the study of severely precipitating storms in mountainous terrain. The intent is to build algorithms which will help improve nowcasting techniques for such storms.

♦ Regional Climate Centers

Regional Climate Center Activities

Steve Doty of the National Climatic Data Center (NCDC) met with the Regional Climate Center (RCC) Directors during the annual meeting of the American Association of State Climatologists. The main topic of discussion centered around the proposed climate services plan, provision of

Cooperative observations on a daily basis, and the Unified Climate Access Network (UCAN). The real-time cooperative observations continue to flow into NCDC from the RCCs, and a system has been established to allow the RCCs to retrieve the data via FTP from the other RCCs. NCDC has also established procedures to make Automated Surface Observation System (ASOS) data available to the RCCs on a near real-time basis, thus saving the RCCs from having to dial into the sites themselves. NCDC has established a small working group to develop detailed plans involving a closer working relationship for customer servicing between NCDC and the RCCs. The goal is to integrate the Centers, where possible, to provide better service for the user while holding down costs.

The RCCs submitted a proposal to the National Science Foundation under the Digital Government initiative. NCDC and the U.S. Department of Agriculture are the federal partners in this effort to enhance the Unified Climate Access Network (UCAN) for the benefit of all.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

♦ Working Groups/ Committees/Meetings

NASA/NOAA Long Term Archive

The National Aeronautics and Space Administration (NASA)/National Oceanic and Atmospheric Administration (NOAA) Round Table met on August 10, 1998, and focused on the long-term archive of NASA Earth Observing System satellite by NOAA. The National Climatic Data Center briefed the status of the Prototype Long-Term Archive Project and the NOAA cost

estimates for a permanent long-term archive beginning in FY01. A U.S. Global Change Research Program researchers workshop will be held in October as input to the FY01 budget strategy.

♦ Visitors

Russian Cooperation

Oleg Alduchov has returned to Russia after a stay of nearly a month at the National Climatic Data Center. During that time, he implemented the upper air Comprehensive Quality Control - Time series

enhancement (CQC-T), thus completing his suite of CQC software. He provided both Unix and PC versions of CQC-T, and installed a Unix version of the monthly station summary software MONADS. He provided documentation for each program, which is being translated.

♦ Publications

Temperature Bias

A paper titled "Satellite-Based Adjustments for the Urban Heat-Island Temperature Bias" by Kevin Gallo (Office of Research and Applications) and Tim Owen (National Climatic Data Center) has been accepted for publication by the Journal of Applied Meteorology. It includes the development of monthly and seasonal relationships between urban-rural differences in temperatures measured at surface-based observation stations and satellite-derived (AVHRR) estimates of a Normalized Difference Vegetation Index (NDVI) and surface radiant temperature (Tsfc). A comparison of the satellite-based estimates of the urban heat-island (UHI) bias with population-based estimates of the UHI bias indicated similar levels of error. The use of satellite-derived data may contribute to a globally consistent method for analysis of the urban heat-island bias.

♦ Interactions with NOAA Line Offices

NWSFOs Receive NCDC HUSWO 1990-1995 CD-ROMs

National Weather Service Forecast Offices (NWSFO) received 160 copies of the National Climatic Data Center's (NCDC) Hourly U.S. Weather Observations (HUSWO) CD-ROM. The CD-ROM contains hourly weather data for 262 NWS locations. The CD-ROM has a map interface and station list for data selection, or the station files can be copied directly from the CD-ROM onto the user's hard drive. The elements included are total

and opaque sky cover, temperature and dew point, relative humidity and station pressure, wind direction and speed, visibility, ceiling height, present weather, Automated Surface Observation System (ASOS) cloud layer data, snow depth, and hourly precipitation. The CD-ROM gives the individual NWSFO the capability to do detailed station analysis, or other climatological applications for any NWS station.

Global Marine Data Provided for COADS

The National Climatic Data Center (NCDC) provided approximately 100 magnetic tapes of global marine data to NOAA's Environmental Research Laboratory (ERL) in Boulder, CO. The data consisted of Air Force Combat Climatology Center (AFCCC) global marine data for 1973 through 1998 (with some data prior to 1973) in DATSAV2 format. Plans call for the addition of these data to the next version of the Comprehensive Ocean Atmosphere Data Set (COADS) database, and previous data samples have been provided for this purpose. NCDC is coordinating with the Environmental Research Laboratories in the usage of these.

♦ Other Contacts

Quality Control of GLOBE Student Data

Global Learning and Observations to Benefit the Environment (GLOBE) has provided the National Climatic Data Center (NCDC) funds to quality control the atmospheric measurements that GLOBE students are taking. NCDC will use summary of the day quality control rules to internally check the student data. The data will also be plotted as time series graphs and compared to nearby cooperative observer data or National Weather Service observing sites. Data will also be plotted on global maps and compared to national and international weather service observations. In-house resources to mentor a university student have been identified.

EMPLOYEE ACTIVITIES

♦ EEO and Community Outreach

United Way/Combined Federal Campaign

Karol Pittman is a member of the Local Federal Coordinating Committee for this year's Combined Federal Campaign. The committee's purpose is to ensure adherence to OPM guidelines and assist CFC chairpersons in directing the campaign.

♦ Personnel Resources

NCDC Employee Completes One-Year Assignment in Oregon

Anne Viront-Lazar has returned to her Station History position at the National Climatic Data Center (NCDC) after completing a one-year assignment with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) National Water and Climate Center (NWCC) in Portland, OR, to work on NWCC metadata projects. While in Portland, Anne became familiar with the NRCS/NWCC data collection networks concerned with high altitude snow pack and other climate data, and a pilot network of soil moisture-soil temperature

monitoring stations. She acquired the historical SNOTEL (SNOW-TElemetry) collection of daily snow-water equivalent, precipitation, and temperature data for archive at NCDC and wrote supporting data set documentation and update procedures. She was asked to review two metadata data base development efforts, NWCC's Air-Water Data Base (AWDB), and the Unified Climate Access Network's (UCAN) site metadata data base. Her recommendations on improvements in design rules, structures, content, and data base documentation were adopted. As a result, there now exists good alignment between the NCDC climate station metadata system and the AWDB and UCAN systems, which will improve the exchange of station metadata throughout the climate data user community for years to come.

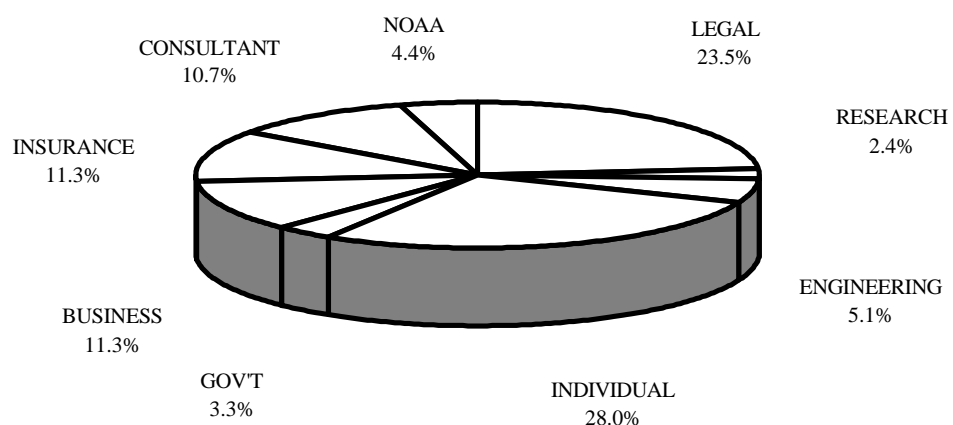
♦ Training

Korn Shell Programming Course Attended

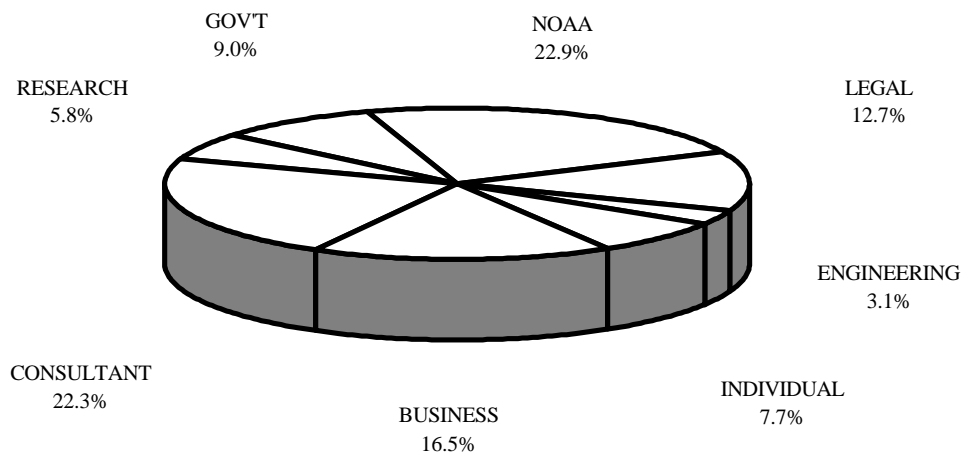
Roger Winchell attended a four-day course in Korn Shell programming at The Learning Tree Institute in Reston, VA. Mr. Winchell also arranged for a five-day, on-site course for New Dimension Executive Control Station (ECS) job scheduling software.

The following charts and graphs show the latest National Climatic Data Center user and data statistics.

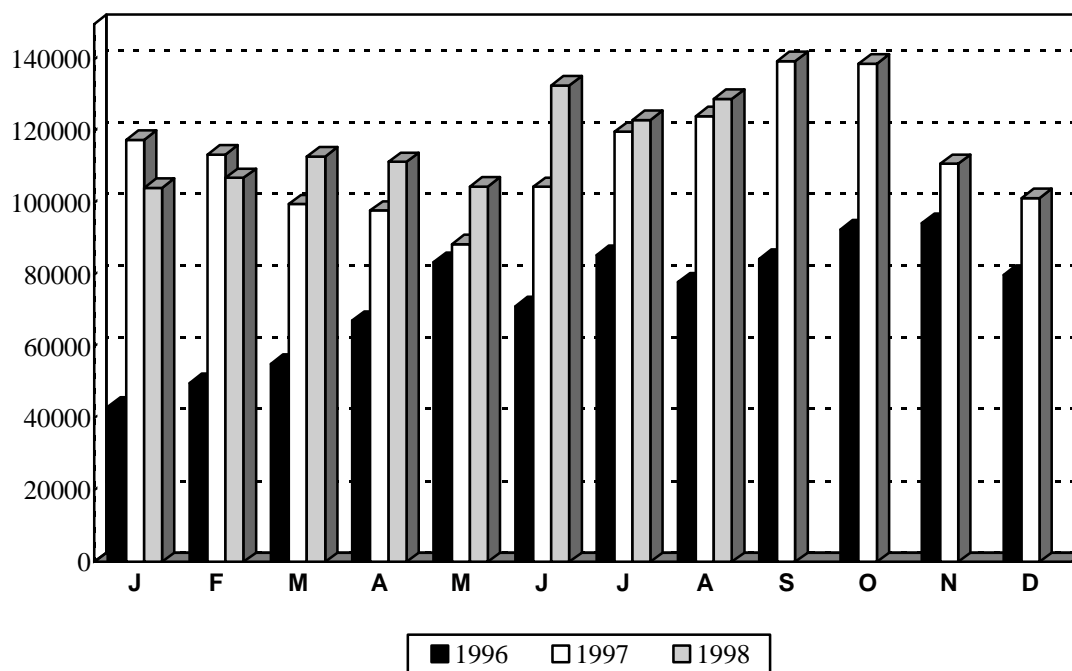
Customer Profile Based on Orders



Customer Profile Based on Order Cost



NCDC On-Line Users



NCDC Off-Line Customer Contacts

